



SALT AND BRINE STORAGE GUIDANCE

FOR ROAD AGENCY MAINTENANCE AND OTHER FACILITIES

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I. INTRODUCTION

There have been documented groundwater quality problems caused by improper salt storage and handling. Most of these problems involve the contamination of drinking water wells.

Salt includes:

- ✓ Sodium chloride (often called rock salt),
- ✓ Potassium chloride.
- ✓ Calcium chloride,
- ✓ Magnesium chloride, and
- ✓ Any solutions or mixtures containing 1% or more of these compounds in either solid or liquid form.



This guidance is to offer the more than 400 Michigan road agency facilities, and other facilities with large amounts of salt or brine, suggested methods for preventing pollution incidents and achieving compliance with the following water protection regulations:

- Effective August 31, 2001, the <u>Part 5 Rules</u>, Spillage of Oil and Polluting Material, promulgated pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) (R 324.2001 through R 324.2009).
- Effective August 26, 1999, Part 22 Rules, Groundwater Quality, promulgated pursuant to Part 31 of Act 451 (R 324.2201 through R 324.2240).
- Part 31, Water Resources Protection, of Act 451 of 1994, as amended
 - Effective June 15, 2004, <u>Section 3111b of Part 31</u> was amended to include additional release reporting requirements to 911 (or the local primary public safety answering point if 911 service is not available) and also a written follow-up report to the local health department if a facility is subject to Part 5 Rules release reporting. Public Act 142 of 2004
 - Effective June 15, 2004, <u>Section 3115 of Part 31</u> was amended regarding penalties for not reporting a release if required or having an illegal discharge. Public Act 143 of 2004.

These regulations and additional resources can be obtained from the Internet at www.michigan.gov/deg and select "Water," then select "Emergency Response for Releases to Water" for the Part 5 Rules information and select "Groundwater Discharge" for the Part 22 Rules information. To request printed copies of the rules, call 517-373-2730 or write to the Water Bureau, Michigan Department of Environmental Quality (DEQ), PO Box 30241, Lansing, Michigan, 48909.

The following salt storage facilities are required to meet the Part 5 Rule requirements:

- a. <u>Any location</u> that has 5 tons or more (threshold management quantity TMQ) of salt in solid form. This includes salt and sand mixtures or other mixtures that contain 1% or more of salt (hereafter referred to as sand-salt).
- b. <u>Any location</u> that has 1,000 gallons or more (TMQ) of salt in liquid form. This includes brine that has 1% or more concentration of salt (i.e. 10,000 milligrams per liter chloride).

This guidance does not cover all the requirements for the following:

- Oil, gasoline, and/or other polluting materials such as ethylene glycol used for deicing aircraft which have requirements under the Part 5 Rules and other state or federal regulations. If you have any questions with regard to storage of these materials, please see the "Pollution Incident Prevention Plan (PIPP) and Part 5 Rules Informational Packet" and contact the Water Bureau District Office in your area or see Appendix B. Also see the Waste and Hazardous Materials Division antifreeze guidance.

The purpose of the Part 5 Rules is to prohibit injurious discharges to the waters of the state and the primary requirements include:

- Surveillance requirements in R 324.2004 so the facility inspects the areas for releases or potential problems
- Storage and use area requirements in R 324.2005(4) for solids to contain the salt or precipitation exposed to the salt
- Secondary containment requirements in R 324.2005(2) for brine stored outdoors to contain the salt or precipitation exposed to the salt
- ➤ Pollution Incident Prevention Plan (PIPP) requirements in R 324.2006 to identify procedures needed to properly contain the salt and other polluting materials onsite, identify the procedures to address releases, and inventory salt storage, etc. (see Appendix C for checklist of required information)
- ➤ Release reporting requirements in R 324.2007, and R 324.2002, and Section 3111b of Part 31 (see Section VIII)

For the purposes of this guidance the following words and their usage are defined as follows:

- "impervious" incapable of being passed through or penetrated.
- **"compatible"** capable of being mixed with, or coming in contact with another substance without reacting chemically or otherwise resulting in deterioration.
- "must" indicates a particular action is required to meet compliance with the regulations.
- "**should**" indicates that the particular action is a recommendation.
- "publicly owned sanitary sewer system" is a term used to describe a municipal sewer system, which is also called a POTW (publicly operated treatment works) and WWTP (wastewater treatment plant).

II. SOLID SALT AND SAND-SALT STORAGE

Possible ways to eliminate the requirement for sand-salt mixture storage and containment provisions would be:

- Use alternative deicing products and clean sand whenever possible to eliminate salt contaminated runoff.
- Store the sand and salt separately and batch-mixed it on an as needed basis, if the amount of salt on-site is below 5 tons.

If solid salt and sand-salt are on-site and meet threshold management quantities of 5 tons or more, the following provides requirements and guidelines for proper storage at salt loading and unloading sites.



A. All solid salt and sand-salt at the site must be stored in an enclosed building, or covered with waterproof tarps, when the facility's total salt storage exceeds the threshold management quantity. This practice will help prevent the generation of salt contaminated runoff and the need for runoff collection and disposal. Storage on impervious surfaces such as asphalt or coated concrete that provide 1 x 10-7 centimeters per second permeability or less should also be utilized to eliminate salt contaminants from seeping to groundwater. If tarps are used, it will be necessary to ensure they are providing the necessary salt protection.

The rules do not require a specific type of structure to be built. For more guidance on constructing salt storage units or calculating space needed for storage, see the <u>salt storage publications</u> from the <u>Salt Institute</u>. At the www.saltinstitute.org website, select "About the Salt Institute" "Publications and Audio-visual materials" and scroll down to "Winter Maintenance". The Salt Storage Handbook contains tables showing how much space different height piles will cover and also provides exposure surface areas to use in calculating how many tarps would be needed for covering salt piles. Road agencies may also contact the Michigan Department of Transportation at 517-322-3319 for information.

- B. All solid salt and sand-salt must be stored at least 50 feet from the shore or bank of any lake or stream or any designated wetland.
- C. Any salt and sand-salt containment structures located within a 100-year floodplain as defined by the federal flood disaster protection act of 1973, 42 U.S.C. 4001 et seq., must be designed and constructed to remain effective during a 100-year flood. Some floodplain information is on the Internet through the <u>Federal Emergency Management Agency</u> at www.fema.gov. Floodplain information may be available through <u>watershed groups</u>, and <u>Soil and Water Conservation District</u>. Or contact the <u>DEQ Land and Water Management Division</u>, Water Management Section at 517-373-1170.
- D. Storage and handling of solid salt awaiting transfer at regional distribution sites, and sand-salt not stored within an enclosed structure, must be designed to contain the salt to prevent run-on, runoff, seepage, or leakage to public sewers or to surface water or groundwater. The salt containment should include storage on an impervious pad and a waterproof tarp covering at all times prior to use. The pad must be sloped to direct salt contaminated runoff to an appropriate collection area, and in a manner that prevents the runoff from reaching the soil or surface waters. The curbing must also direct runoff to an appropriate collection area (see sections VI and VII).

III. BRINE STORAGE

Brine storage facilities must meet all of the following conditions.

- A. All aboveground brine storage tanks must have secondary containment (e.g. spill containment dikes, double walled tanks, etc). The dike must be lined with or constructed of an impervious material. Soils, other than clay, are not impervious. If a concrete or asphalt liner is used, it must be free of cracks and covered with a compatible waterproof coating. Please refer to Appendix A of this document for liner and lagoon design recommendations.
- B. The containment area must have an enclosed storage area so as to be able to contain a volumetric capacity of at least 100% of the largest tank's capacity or at least 10% of the total volume of tanks within the containment area, whichever is larger. The containment area must be constructed so that no volume of brine can escape through drains, sewer systems, or otherwise directly or indirectly into any sewer without prior written approval by the wastewater treatment plant operator or to the surface waters or groundwater of the state.
- C. Consider how to provide squirt protection in case aboveground tanks holding liquids are punctured or ruptured. Use engineering calculations to calculate the potential distance a material can squirt, or a general rule of thumb for determining squirt distance for containers is to measure the tallest height of the containers and use that measurement as the minimum distance between the stored containers and the edge of the containment area.
- D. Tanks set on ring foundations should be tested each year to insure that there is no leaking inside the ring.
- E. All accessory pipes, hoses, valves, and pumps must also be located within the diked area. Top loading and unloading piping is recommended.
- F. The containment area should be designed so it is accessible at all times and so there will be easy removal of storm water and spillage by a non-automatic sump, if required.
- G. Spilled brine should be pumped and transferred to another tank or tank truck for use or disposal (see Section VI). The PIPP must include provisions for the capture and removal of spilled brine as prescribed by R 324.2006 of Part 5. The PIPP should also include steps to promptly collect and transfer brine from any disabled or damaged tanker on the road.
- H. If the brine is from an oil or gas well, then there are additional requirements including annual testing and the facility must obtain a <u>General Permit 2215-00-5 Application of Oil Field Brines for Ice and Dust Control and Soil and Road Stabilization</u> from the Water Bureau. The brine must meet the requirements in <u>R 324.705</u> of the administrative rules promulgated under Part 615, Supervisor of Wells, of Act 451. Contact Ray Vugrinovich at 517-241-1532 for more information.

In order to be used for ice or dust control, the brine and well must be approved by the Office of Geological Services (OGS) and meet the following criteria:

- Calcium: 20,000 milligrams per liter or more;
- > Total Benzene, Ethylbenzene, Toluene, Xylene: 1,000 micrograms per liter or less.

The PIPP should include the facility's management procedures and maximum brine application rates (1,500 gallons per lane mile of road or 1,250 gallons per acre of land, provided runoff does not occur) contained in <u>General Permit 2215-00-5 Application of Oil Field Brines for Ice and Dust Control and Soil and Road Stabilization</u>.

IV.TRUCK LOADING/UNLOADING AREAS

A responsible observer should be present at all times when salt and brine is being loaded and unloaded. All truck loading and unloading areas must be maintained by one of the following options:

A. Loading areas must be constructed on an impervious pad and should be covered or enclosed within the storage structure to prevent the generation of salt contaminated runoff.



B. Loading areas must be surrounded by curbing or graded to direct salt contaminated runoff to an appropriate collection area (as described under Storm Water Collection and Disposal in section VI), and the drainage ways should be scraped clean of all salt and sand-salt mixture after trucks are loaded and dispatched. The collected salt or sand-salt should be used or returned to the proper storage area.

V. TRUCK WASH AREAS AND GARAGE FLOOR DRAINS

All truck wash areas must be located on an impervious pad. The pad must be sloped or curbed to contain the wastewater and direct it to a collection area for recycling or proper disposal. The wastewater from all garage floor drains and truck wash areas, which is not collected and recycled, must be disposed of by one of the following options.

- A. Facility must obtain prior approval from the wastewater treatment facility operator before any discharge of the wastewater to a publicly owned sanitary sewer system. This should be a written approval.
- B. The facility can discharge the wastewater into a holding tank which is subsequently pumped and hauled for proper disposal. It is usually taken to a wastewater treatment facility with prior approval from the treatment facility operator, a disposal well, or other disposal company. Recommendations for holding tank design and installation may be obtained from Water Bureau District staff.
 - 1. If a company is hired to haul the liquid waste, then they must be a <u>permitted and registered waste transporter</u> in accordance with <u>Part 121</u>, Liquid Industrial Wastes, of the Natural Resources and Environmental Protection Act, 1994 P.A. 451, as amended, and <u>Act 138 of 1998</u>, Hazardous Material Transportation Act. The facility must have a site identification number before shipping. Check the <u>Waste Data System (WDS)</u> to see if an existing number is assigned for the site and other information on file, and either use the online MiTAPS system at <u>www.michigan.gov/mitaps</u> or submit the <u>form EQP5150</u> if need to update information or apply for a new number. Waste manifests must accompany the shipment and the facility must meet <u>manifest recordkeeping requirements</u>. Submit manifest copy to DEQ Waste & Hazardous Materials Division by the 10th of month following shipment. Get signed copy back from the disposal company and keep that copy at least 3 years from the date of shipment. If the transporter is using a <u>consolidated manifest</u>, they must provide the facility with a receipt that has the following:
 - Transporter's company name,
 - Driver's signature,
 - Date of pickup,
 - Type and quantity of waste removed,
 - Consolidated manifest number, and the
 - Designated facility information.

- 2. If a governmental agency owns and operates the hauling vehicle, they are exempt from the permit and registration transporter requirements but must still meet manifesting and other liquid industrial waste generator requirements. See above for site identification number and manifesting requirements. Confirm with the insurance company that there is coverage for environmental cleanup in case of an accident.
 - If the governmental agency is hauling 55 gallons or less themselves, they are not required to use a manifest if the following conditions are met:
 - A record of the source and quantity of waste and where the waste is being transported is kept with the waste shipment.
 - The designated facility acknowledges receipt of the waste by signing the record and they keep a copy of the record.
 - Keep a copy of the shipment records for at least three years.
 - The designated facility and the generator must manage the waste according to the liquid industrial waste regulations.
- C. The facility is not allowed to discharge to the environment unless the wastewater discharge to the groundwater or to surface water has the required individual permit, or meets one of the exemptions or conditions for a specifically authorized discharge under Part 22, Groundwater Quality Rules, of Part 31, (see R 323.2210 (v), R 323.2215, or R 323.2218). General permits or exemptions can be considered for wash water or snow melt only when it does not contain additives or other contaminants. Floor drains, in garages where automotive repair and maintenance occurs, are not allowed and are not eligible for an exemption. Discuss the operations with the local Water Bureau district office.

VI.SALT CONTAMINATED STORM WATER MANAGEMENT

Salt contaminated storm water (hereafter referred to as brine) from the loading and unloading areas and salt and sand-salt storage areas can be managed in accordance with one of the following options. Storm water in contact with salt resulting in a chloride concentration of 10,000 mg/l or greater must be collected for use or proper disposal.

- A. The preferred option is to collect and use the brine as a road dust control agent or pre-wetting ice control agent. Meet the industry and/or MDOT recommendations regarding usage concentration and application rates for using brine or for pre-wetting sand or roads. It is recommended that if brine is used as a dust control agent, it is used only as make-up water on commercial products. This is the preferred management option.
 - 1. A groundwater discharge permit may not be required per R 323.2210(b) if application is done according to "normally accepted or regulated practices." These practices must not cause nuisance conditions or erosion, or becomes injurious, and it does not cause runoff to, ponding on, or flooding of adjacent property.
 - 2. Storm water in contact with salt resulting in a chloride concentration of 250 mg/l or greater, or sodium concentration of 120 mg/l or greater, is subject to Part 31 groundwater discharge authorization. Discuss requirements with the <u>local Water Bureau district office</u>.

B. Discharge the brine into a holding tank for later disposal off-site. Holding tank guidance is being developed. Contact the Environmental Assistance Center at 800-662-9278 for availability or discuss your holding tank design and installation questions with the Water Bureau district office.

When being disposed of, the brine must be pumped and hauled by a permitted and registered liquid industrial waste transporter or by using the governmental agency's vehicle. See Section V.B for site identification and shipping requirements. If the brine is not reused, it should be hauled for disposal to an Environmental Protection Agency (EPA) and DEQ approved Class I Underground Injection Control (UIC) disposal well or to a facility capable of treating it. As of August 2005, there are two commercial disposal wells that accept brine from salt piles in Michigan:

- Liquid Management Inc, Bay City 517-684-3742 (Bay County)
- Northeastern Exploration, Johannesburg 800-792-8168 or 989-786-4346 (Otsego County)
- C. Collect the brine in a lined lagoon for later disposal off-site. When being disposed of, it must be pumped and hauled either by a permitted and registered liquid industrial waste transporter or by using the governmental agency's vehicle (see section V. B.). If not reused, it should be hauled for disposal to an EPA and DEQ approved Class I UIC disposal well (see above) or to a facility capable of treating it.
 - The lagoon must be lined with an impervious, compatible material which is capable of withstanding changing weather conditions without significant deterioration and/or loss of integrity. Please refer to Appendix A of this document for liner and lagoon design recommendations.
 - 2. The lagoon must be accessible at all times of the year.
 - 3. An appropriate test for lagoon leak detection should be performed annually.
 - 4. The lagoon must have adequate storage capacity. Storage capacity should be determined by considering the frequency that the lagoon will be pumped and the maximum amount of rainfall or snow melt possible during that time. The lagoon must maintain at least one foot of freeboard above the lagoon water level at all times. The lagoon liner must be saturated at all times with at least a one foot water/wastewater level to avoid UV rays degrading installed plastic liners (and stored liners awaiting installation) and desiccation cracking of clay liners.
- D. The DEQ does not recommend that brine be discharged directly to a municipal sanitary sewer due to potential impacts to surface water and groundwater quality. However, where options for reuse or approved brine disposal wells are unavailable, it may be an option depending on the amount of brine, the rate of discharge to the wastewater treatment plant, and the discharge location.

Prior to discharge to a municipal sanitary sewer, approval must be obtained from the wastewater treatment plant (WWTP) personnel and an evaluation must be made by DEQ to determine whether water quality standards will be met. The DEQ evaluation will be made at time of reissuance of the WWTP's discharge permit if the WWTP identifies the potential discharge (including flow and concentration of salt) in their permit application. If the DEQ evaluation shows water quality standards will be met, then the WWTP can approve the discharge into their sanitary sewer.

VII. UNCONTAMINATED STORM WATER MANAGEMENT

The best management option is to eliminate all salt contaminated runoff and thus eliminate the required collection and disposal of salt contaminated wastewater. Enclosed salt storage and a valved piping system is a practical method to eliminate storm water from entering the brine collection system.

The site operator will need to determine if the storm water is contaminated with salt or other pollutants or uncontaminated. To be excluded from the Part 5 rules, the salt concentration must be below 1% concentration. The PIPP must include how you will manage the storm water as discussed below:

Uncontaminated storm water collected in the containment area may be handled by either:

- A. Applying the storm water to the soil surface outside the containment area without a groundwater discharge permit per R 323.2210(d) if the water does not contain salt contaminated storm water or other leaks or spills and is inspected to ensure compliance with other discharge standards of the Part 22 Rules. For storm water exposed to salt, the discharge of sodium concentration must be below 120 ppm and chloride concentration below 250 ppm; otherwise the discharge is regulated by R 323.2222. If storm water is directly discharged to surface water, it must also meet Part 4 Rules on Water Quality Standards. Discuss these limits or discharge permit requirements with the Water Bureau District Office.
 - The discharge cannot be, or become, injurious, and cannot cause runoff to, ponding on, or flooding of adjacent property. It also cannot cause erosion or cause nuisance conditions. When doing a visual inspection before discharging, consider odor, color of any discharges, turbidity, floatable solids, deposits or stains. See the EPA Storm Water Management Fact Sheet "Visual Inspection."
- B. Discharging the storm water directly to a municipal sanitary sewer with prior approval of the treatment facility operator. Approval should be in writing. Be aware not all sewer systems accept storm water.

VIII. REPORTING POTENTIAL INCIDENTS OF CONTAMINATION

A. The facility needs to meet the following reporting requirements if a release occurs and it meets or exceeds the threshold reporting quantities of 50 pounds of salt or 50 gallons of brine. If salt-sand is spilled, calculate the amount of mixture that would contain 50 pounds of salt. This calculation should be done before a release occurs and included in your PIPP

1. Call to report releases:

- > PEAS at 800-292-4706 or from out of state call 517-373-7660, and
- > **911** (or the primary public safety answering point per Section 3111b of Part 31)

2. Submit written report within 10 days after the release to:

- ➤ DEQ Water Bureau District Supervisor that oversees the area where the release occurred (Note. See Appendix B for the mailing address which is the same as for the staff contacts. This program was transferred to the Water Bureau, so the report no longer is submitted to the Waste Management Division as noted in the rule.)
- Local health department, environmental health section (per Section 3111b of Part 31)

A facility may use the form <u>EQP 3465 "Spill or Release Report"</u> attached in Appendix D or available on the Internet, or submit a written report containing the information identified in Rule 7(2). Include:

- a. Cause of the release
- b. Date and time of discovery of the release
- c. Response measures that have been done, and the schedule for completion of other measures to be taken, or both
- d. Measures taken to prevent recurrence of similar releases

3. Report releases if required under other regulations.

When preparing a PIPP, it is recommended you identify potential scenarios that would require additional release reporting and include those in the plan. For example, a local wastewater treatment plant may require a report if a release went into a drain that goes into their system. Check with the sewer authority for local reporting requirements. Another example where additional release reporting requirements may apply is if there was an accident with a salt truck and in addition to the salt release, there was fuel or other fluids from the vehicles released in reportable amounts or a salt truck hit a fuel storage tank resulting in a release of fuel.

If you are required to submit a written release report to a DEQ Division (for example a permit may require reporting of releases) and are subject to the Part 5 Rule reporting requirements, and if the other required report contains the information listed, it is not necessary to also submit a separate report to the Water Bureau for meeting the Part 5 release reporting requirement. Releases that go into a public wastewater treatment plant (WWTP) and meet Part 5 Rule conditions are reportable to the Water Bureau.

- B. The road agency or other responsible party may be required to conduct a hydrogeological investigation if DEQ staff deems that a spill or other discharge to the ground warrants an investigation. The investigation may need to determine one or more of the following factors:
 - 1. Groundwater flow direction.
 - 2. Groundwater flow rate.
 - 3. Horizontal and vertical extent of contamination.
 - 4. Potential adverse effects on the human and natural environment from the discharge.
 - 5. Alternative remedial actions to consider.
 - 6. Other factors deemed necessary by DEQ staff.

APPENDIX A — LAGOON DESIGN RECOMMENDATIONS

Treatment and storage lagoons for wastewater regulated under Part 31 of Act 451 and the Part 22 Groundwater Quality Rules must be designed to prevent, to the maximum extent possible, discharges to the groundwater. The following criteria are acceptable to the Water Bureau, Department of Environmental Quality (DEQ), as guidance for treatment and storage lagoon design along with the Part 22 Guidesheet IV "Wastewater Treatment and Storage Lagoons" which has more information about liners and the quality assurance program. This guide sheet can be found at www.michigan.gov/deq and select "Water" "Groundwater Discharge" and under Permits heading select "Groundwater Permit Application Forms & Technical Information." Note that the quality assurance report is now submitted to the Water Bureau District Office instead of the Waste Management Division as stated on page 5 of the guide sheet.

A composite liner is a system that consists of both of the following components:

- 1) An upper component that consists of a flexible membrane liner which is installed in direct and uniform contact with the lower compacted soil component. The flexible membrane liner shall have nominal thickness not less than 40 mils (0.040 inch) polyvinyl chloride or 60 mils (0.060 inch) thick high-density polyethylene in accordance with R 323.2237(3).
- 2) A lower component that consists of any of the following soil layers:
 - (a) A compacted soil clay liner that meets the requirements of R 323.2237(2)(b).
 - (b) A geocomposite clay liner that meets the requirements of R 323.2237(2)(c).
 - (c) A natural soil clay barrier that meets the requirements of R 323.2237(2)(a).
 - (d) An alternative soil layer that is approved pursuant to the provisions of the Part 22 Rules.

Alternate composite designs will be considered by the Water Bureau District staff and approved, if the alternative design provides the same or greater environmental protection.

Prior to initiating lagoon construction, the following must be approved in writing by the appropriate <u>DEQ</u> Water Bureau District Office:

- Preliminary soil study verifying that an adequate volume of clay exists on site or can be brought which meets the soil criteria for the clay portion of the composite liner
- > Engineering plans for lagoon construction
- Construction Quality Assurance Plan

Recertification of liner construction must be done after sludge removal, or any maintenance or other activity which can potentially jeopardize the liner integrity.

APPENDIX B — DEQ WATER BUREAU DISTRICT OFFICE CONTACTS

DISTRICT OF STATE OF						
DISTRICT OFFICE LOCATION		SERVING THE FOLLOWING COUNTIES		STAFF CONTACT MAILING ADDRESS	PHONE/ Email	
	Bay City (Saginaw Bay)	Arenac Bay Clare Gladwin Huron Iosco	Isabella Midland Ogemaw Saginaw Sanilac Tuscola	Gene Suuppi DEQ Water Bureau 503 N Euclid Ste 8 Bay City MI 48706-2965	989-686-8025 ext 8262 mailto:suuppig@michigan.gov	
	Cadillac	Antrim Benzie Grand Traverse Kalkaska Lake Leelanau	Manistee Mason Missaukee Osceola Wexford	Brian Myers DEQ Water Bureau 120 West Chapin St Cadillac MI 49601 OR	231-775-3960 ext 6263 mailto:myersbf@michigan.gov	
	Gaylord Field Office	Alcona Alpena Charlevoix Cheboygan Crawford Emmet	Montmorency Oscoda Otsego Presque Isle Roscommon	Rick Shoemaker DEQ Water Bureau 2100 West M-32 Gaylord, MI 49735	989-705-3424 mailto:shoemakr@michigan.gov	
	Grand Rapids	Barry Ionia Kent Mecosta Montcalm	Muskegon Newaygo Oceana Ottawa	Keith Zahn DEQ Water Bureau 350 Ottawa Ave NW Grand Rapids MI 49503	616-356-0244 mailto:zahnk@michigan.gov	
	Jackson	Hillsdale Jackson Lenawee	Monroe Washtenaw	Greg Merricle DEQ Water Bureau 301 E. Louis Glick Hwy Jackson MI 49201-1556	517-780-7841 mailto:merriclg@michigan.gov	
	Kalamazoo	Allegan Berrien Branch Calhoun	Cass Kalamazoo St. Joseph Van Buren	Steve Norton Greg Danneffel DEQ Water Bureau 7953 Adobe Rd Kalamazoo MI 49009	269-567-3573 269-567-3575 mailto:nortonsc@michigan.gov mailto:danneffg@michigan.gov	
	Lansing (previously Shiawassee)	Clinton Eaton Genesee Gratiot	Ingham Lapeer Livingston Shiawassee	Craig Lapham Chris Babcock DEQ Water Bureau PO Box 30242 Lansing MI 48909	517-335-6113 517-373-2230 mailto:laphamc@michigan.gov mailto:babcockch@michigan.gov	
	Southeast Michigan	Macomb Oakland St. Clair Wayne		Tracy Kecskemeti DEQ Water Bureau 27700 Donald Court Warren MI 48092-2793	586-753-3777 mailto:kecskemt@michigan.gov	
	Upper Peninsula Gwinn (previously Marquette)	Alger Baraga Chippewa Delta Dickinson Gogebic Houghton Iron	Keweenaw Luce Mackinac Marquette Menominee Ontonagon Schoolcraft	Randy Conroy DEQ Water Bureau 420 Fifth St Gwinn MI 49841	906-346-8527 mailto:conroyr@michigan.gov	

You may also contact Bob Babcock, Water Bureau, at 517-373-8566 or email mailto:babcockr@michigan.gov.

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APPENDIX C — PIPP COMPLETENESS REVIEW CHECKLIST

This checklist is provided to help identify that the minimum requirements included in Rule 323.2006 that must be addressed in the PIPP along with a few recommended items to include. Include components that are specific to the facility's pollution prevention methods and emergency response. It is not required to provide the information in the order presented. This checklist does not address all the requirements that may be needed to be included if preparing an Integrated Contingency Plan (ICP) as that will vary with the other planning regulation requirements.

<u>IN T</u>	HE	<u>PLAN?</u>	Facility identification information Rule 6(1)(a)
Yes	No	N/A □	Facility name Facility owner Mailing address Street address (if different from mailing address) Facility telephone number 24-Hour emergency telephone number(s) Designated spill prevention and control coordinator. It is recommended to also have an alternate contact. Name of person(s) responsible for on-site spill prevention and control (if different from coordinator). is recommended to also identify an alternate contact. Procedures that will be used to notify individuals within the facility. It is recommended you include how the following will be alerted of an emergency at the facility: a. Spill prevention and control coordinator b. Person(s) responsible for on-site spill prevention and control if different from coordinator, and c. Other people in the facility about the emergency Map showing facility relative to the surrounding area, include thoroughfares.
		N/A	Notification Procedures to Entities Outside of Facility Rule 6(1)(b) ntify the reporting procedures that will be used to notify entities off-site. At a minimum, including the following:
			Michigan Department of Environmental Quality a. PEAS Hotline 800-292-4706 (or 517-373-7660 if calling from out-of-state) b. <u>District office</u> during business hours (recommended) U.S. Coast Guard - National Response Center 800-424-8802 911 or if that service not available, then contact your community's primary public safety answering point
			Local emergency planning committee (may be covered by calling 911) Local fire department (may be covered by calling 911) Local law enforcement agency (e.g. police, sheriff's department, state police)
			(may be covered by calling 911) Municipal wastewater treatment plant if facility served by that plant Spill clean-up contractor, or consulting firm, or both Other local, state, and/or federal agencies or entities that you may be required to report releases under other regulations (required if preparing an ICP that has additional reporting requirements)
Yes	No	N/A	Spill Control and Cleanup Procedures Rule 6(1)(c) ntify information about how the facility will control spills and conduct cleanups of releases: Inventory and location of spill control and clean-up equipment (type and quantity) a. Equipment available on-site b. Equipment available off-site Procedures for response and cleanup Procedures for characterization and disposal of recovered materials
Yes		N/A	Polluting Material Inventory Rule 6(1)(d) ude information about polluting materials typically on-site in quantities exceeding TMQs ing the preceding 12 months: Polluting Material(s) by: a. Chemical Name(s), and b. Product Name (e.g. Trade Name(s)), and c. Chemical Abstracts Service (CAS) number
\vdash			C. Chemical Abstracts Service (CAS) humber Location where the Material Safety Data Sheets (MSDS) are kent for these polluting materials

IN THE PLAN? V: Site Plan Rule 6(1)(e)						
Yes	No	N/A		lude information about polluting materials typically on-site in quantities exceeding TMQs		
			1. 2. 3. 4. 5. 6. 7.	Aboveground and underground storage tanks Floor drains (know where these floor drains lead to) Loading and unloading areas, docks Sumps (sump pumps) On-site water supply Containment structures for solid polluting materials Secondary containment structures for liquid polluting materials Other storage and use areas of polluting materials that do not exceed TMQs (recommended) Other relevant site structures		
Yes	No	N/A	Inc	Outdoor Secondary Containment for Liquid Polluting Materials Rule 6(1)(f) lude information about outdoor secondary containment structures on-site used for liquid luting materials exceeding TMQs:		
			1. 2. 3.	Location(s) Design and construction data including: a. Dimensions b. Construction materials (and types of coatings) used c. Holding capacity d. Amount of polluting material stored in that structure How spilled polluting materials will be captured and removed		
				Provisions for physical security of secondary containment structure, such as: a. Signage b. Gates & Fences c. Barriers d. Other Precipitation management (rain or storm water and snow accumulation) procedures a. Characterization of collected precipitation b. Dispaced procedures		
			6.	 b. Disposal procedures c. Copies of permits or exemptions authorizing discharge (i.e. from DEQ, local wastewater treatment plant) Inspections and maintenance procedures 		
Yes □ □	No □	N/A	Inc 1.	Other Control Mechanisms and Facility Security Rule 6(1)(g) & (h) lude the following information if it has not already been addressed in the plan: Other control mechanisms at facility to prohibit or control releases Provisions for general facility physical security		
Yes □	No □	N/A	Co	: Plan Preparation, Submittal, and Update Requirements Rule 6(2)–(5) mplete PIPP or ICP, review and update as necessary, and submit notifications: PIPP, or update, was completed by August 31, 2003 or when facilities meet threshold management quantities		
			2. 3.	Plan is kept at the facility and available for inspection Notification that PIPP or ICP has been prepared and certification of compliance with Part 5 rules sent to Water Bureau district office within 30 days of completing the PIPP or ICP		
			7. 8.	Notification sent to LEPC that plan is completed and available upon request Notification sent to local health department that the plan is completed and available upon request Copy of plan submitted to a requesting agency within 30 days after receiving the request Plan is evaluated every three years and after any release requiring implementation of the plan Plan is updated if any facility personnel, processes, or procedures that were included in the plan occur, or other changes are necessary to maintain compliance with rules		
				Recertification and re-notification of updates are sent to <u>Water Bureau district office</u> , <u>LEPC</u> , and <u>local health department</u> Plan is modified within 30 days of receipt, or other DEQ provided response timeframe, of the DEQ's request to modify the plan if found to be incomplete or inadequate; submit re-notification and recertification		

APPENDIX D — SPILL OR RELEASE REPORT

Report Form EQP3465 begins on the next page. This form is optional to use when reporting releases. It can be used by a facility to organize information they need to report when they call in a release and can also be used to submit the written follow-up report for reportable releases under the Part 5 rules.

Facilities may choose to enter basic information such as facility name etc. onto the form, and then enter the spill/release specific information if the need arises.



FACTORS CONTRIBUTING TO RELEASE

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

SPILL OR RELEASE REPORT

NOTE: Some regulations require a specific form to use and procedures to follow when reporting a release. Those forms and procedures MUST be used and followed if reporting under those regulations. This report form is to aid persons reporting releases under regulations that do not require a specific form. This report form is not required to be used. To report a release, some regulations require a facility to call the PEAS Hotline at 800-292-4706, or DEQ District Office that oversees the county where it occurred, and other regulating agencies and provide the following information. A follow-up written report may be required. Keep a copy of this report as documentation that the release was reported. If you prefer to submit this report electronically by FAX or email, contact the regulating agency for the correct telephone number or e-mail address. See the DEQ website on Spill/Release Reporting for more reporting information. Click here for a Microsoft Word version of this report.

Please print or type all information. NAME AND TITLE OF PERSON SUBMITTING WRITTEN REPORT TELEPHONE NUMBER (provide area code) NAME OF BUSINESS RELEASE LOCATION (provide address if different than business, if known, and give directions to the spill location. Include nearest highway, town, road intersection, etc.) STREET ADDRESS CITY STATE ZIP CODE

BUSINESS TELEPHONE NUMBER (provide area code	<u>a</u>)			_		
SITE IDENTIFICATION NUMBER AND OTHER IDENTI	EVING NUMBERS (if applicable)	COUNTY	TOWNSHIP	TIER/RANGE/SECTION		
OHE IDENTIFICATION NOMBER AND OTHER IDENTI	THO NOMBERO (II applicable)	COUNTY	TOWNSHIII	(if known)		
				(II KIIOWII)		
RELEASE DATA. Complete all applicable categories. Check all the boxes that apply to the release. Provide the best available						
information regarding the release and	its impacts. Attach addition	nal nages if necessary				
intormation regarding the release and	no impacto. Attachi additioi	iai pages ii riecessary.				

DATE & TIME OF RELEASE (if known)	DATE & TIME OF DISCOVERY	DURATION OF RELEASE (if	known) _ days _ hours _ minutes	TYPE OF INCIDENT Explosion Fire Leaking container Loading/unloading	☐ Pipe/valve ☐ Vehicle acc ☐ Otherrelease	
MATERIAL RELEASED (C	Chemical or trade name) DITIONAL MATERIALS LISTED	ON ATTACHED PAGE.	CAS NUMBER OF HAZARDOUS WA		ESTIMATED QUANTITY RELEASED (indicate unit e.g. lbs, gals, cu ft or yds)	PHYSICAL STATI RELEASED (indicate if solid, liquid, or gas)

SOURCE OF LOSS

Operator error	raining deficiencies Jnusual weather conditions other	Railroad car	☐ Ship ☐ Tank ☐ Tanker	☐ Truck ☐ Other
TYPE OF MATERIAL RELEASED	MATERIAL LISTED ON or DEFINED BY	IMMEDIATE ACTIONS TAKEN	N	
□ Agricultural: manure, pesticide, fertilizer □ Chemicals □ Flammable or combustible liquid □ Hazardous waste □ Liquid industrial waste □ Oil/petroleum products or waste □ Salt □ Sewage	□ CAA Section 112(r) list (40 CFR Part 68) □ CERCLA Table 302.4 (40 CFR Part 302) □ EPCRA Extremely Hazardous Substance (40 CFR Part 355) □ Michigan Critical Materials Register or permit □ NREPA Part 31, Part 5 Rules polluting material □ NREPA Part 111 or RCRA hazardous waste □ NREPA Part 121 liquid industrial waste □ Other list □ Unknown	☐ Containment ☐ Dilution ☐ Evacuation ☐ Hazard removal ☐ Neutralization ☐ System shut down	tr D D P M	iversion of release to eatment econtamination of ersons or equipment lonitoring

``-4
Distance from spill location to
surface water, in feet

Groundwater (indicate if it is a known or suspected drinking water source and include name of aquifer, if known)						
Soils (include type e.g. clay, sand, loam, etc.)						
☐ Ambient Air						

Unknown

☐ Spill contained on impervious surface

EXTENT OF INJURIES, IF ANY		WAS ANYONE HOSPITALIZED? Yes number	TOTAL NUMBER OF INJURIES TREATED ON-SITE:
		HOSPITALIZED:	
DESCRIBE THE INCIDENT, THE TYPE OF EQUIPMENT INVOLVED IN THE RELEASE ENVIRONMENTAL DAMAGE CAUSED BY THE RELEASE. IDENTIFY WHO IMMEDIAT name, contact person, and telephone number). ALSO IDENTIFY WHO DID FURTHEI CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED O	TELY RESPONDED TO THE INCIDENT (own R CLEANUP ACTIVITIES, IF PERFORMED C	employees or contractor — inclu	de cleanup company
ESTIMATED QUANTITY OF ANY RECOVERED MATERIALS AND A DESCRIPTION OF CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED OF CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED OF CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED OF CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED OR ASSESSMENT OF ACTUAL OR POTENTIAL HAZARDS TO HUMAN HEALTH (include regarding medical attention necessary for exposed individuals.)	ON ATTACHED PAGE		
CHECK HERE IF DESCRIPTION OR ADDITIONAL COMMENTS ARE INCLUDED O	OTHER ENTITIES NOTIFIED:		
INITIAL CONTACT BY: ☐ Telephone ☐ Fax ☐ Email ☐ Other		Г	Date: Time:
DATE/TIME INITIAL CONTACT:	☐ National Response Center (N	NRC): 800-424-8802	
☐ PEAS: 800-292-4706 Log Number Assigned	☐ US Coast Guard Office: ☐ Detroit ☐ Grand Haven ☐ S ☐ US Department of Transport	ation _	
□ Baraga □ Gwinn □ Air Quality □ Bay City □ Jackson □ Land & Water Management □ Cadillac □ Kalamazoo □ Office Geological Survey	☐ US Environmental Protection☐ 911 (or primary public safety☐ Local Fire Department	• • -	
☐ Crystal Falls ☐ Lansing ☐ Remediation and ☐ Detroit ☐ Newberry Redevelopment	☐ Local Police and/or State Po☐ Local Emergency Planning C	-	
☐ Gaylord ☐ Warren ☐ Waste and Hazardous ☐ Grand Rapids ☐ Wyoming Materials	☐ State Emergency Response via MI SARA Title III Prograr	Commission _	
DEQ Office locations are subject to change Water Bureau	☐ Wastewater Treatment Plant☐ Hazmat Team	Authority _	
NAME AND TITLE OF PERSON MAKING INITIAL REPORT:	□ Local Health Department □ Department of Labor & Econ □ Department of Labor & Econ □ Michigan Department of Agri □ Other	omic Growth Fire Safety _ culture: 800-405-0101	
DEQ STAFF CONTACTED & PHONE NUMBER:	PERSON CONTACTED & PHO		
DATE WRITTEN REPORT SUBMITTED SIGNATURE OF PERSON SUBM	MITTING WRITTEN REPORT		

